

REMARKS

In view of the above amendments and the following remarks, Applicant requests favorable reconsideration and allowance of the present application.

Claims 84-93 remain pending in this application, with Claims 84, 86, and 91 being independent. By this Amendment, Applicant has amended Claims 84, 86, 88, and 91.

Claims 84-93 stand rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 4,679,038 (Bantz, et al.) in view of U.S. Patent No. 5,509,115 (Butterfield, et al.). Applicant traverses this rejection.

As recited in independent Claim 84, Applicant's invention is directed to a method of creating an image characterized in that the image is formed as a plurality of bands. The bands are formed independently of data included in the bands, and each of the bands represents an independently displayable portion of the image. Each of the bands is stored as independent compressed pixel image data such that each of the bands is configured for independent manipulation.

As recited in independent Claim 86, Applicant's invention is directed to a method of creating an image formed as a plurality of bands or sections. The bands are formed independently of data included in the bands, and each of the bands represents an independently displayable portion of the image. Each of the bands is stored as independent compressed pixel image data and each of the bands is configured for independent editing.

As recited in independent Claim 91, Applicant's invention is directed to a method of creating an image. The method includes a step of rendering a band of image data forming a corresponding band of the image. The band is formed independently of data included in the band the band represents an independently displayable portion of the image.

Thus, the invention generally involves compressing bands representing independently displayable portions of an image, with the bands being formed independently of the type of data included in the bands. This arrangement reduces the amount of memory needed to retain a particular decompressed band of the image so that various manipulation functions can be performed on the decompressed pixel image data. In this manner, manipulation of an image is possible on a band-by-band basis while the bulk of the image remains in a substantially compressed format.

The Bantz, et al. patent is directed to a band buffer display system. The Office Action acknowledges, and Applicant submits, that the Bantz, et al. patent does not describe decompression of compressed image data as claimed in the present invention.

Moreover, Applicant submits that the Bantz, et al. patent teaches away from decompression of image data. The Bantz, et al. patent describes, at col. 8, lines 19-22, the concept of a repetitious copy operation, done at full refresh rates, from an image memory to a band buffer. If such a system used compression or decompression of image data, Applicant submits that the process of providing a copy operation at full refresh rates would be hindered.

The Butterfield patent discloses a method and apparatus for performing image rendering. Applicant understands the method to involve providing graphics instructions defining an image to be displayed or printed. These instructions are interpreted to generate a set of graphics orders that are subsequently processed to create a bitmap image for output to a display or printer device. As disclosed at column 10, lines 1 to 5, of that patent, a realtime blit processor 37 converts stored orders into a bitmap image corresponding to a band or section of the page to be printed which is stored in band buffers 41a, 41b or 41c. Further, as disclosed at column 10, lines 9 to 15, a "band fault" is declared when a stored order pertains to a bitmap image that crosses a band boundary. Still

further, as disclosed at column 10, lines 25 and 26, if banding is not used, a single band buffer is used to hold a complete page.

Accordingly, Applicant understands that each of the bands of the image described in the Butterfield patent is stored in one of the band buffers 41a, 41b or 41c as a decompressed bitmap image (i.e. decompressed pixel data) corresponding to a band or section of the page to be printed.

In addition, as Applicant understands the Butterfield patent, the document discloses at column 12, lines 33 to 48, that banding is a process in which the page (i.e., the entire page) to be printed is represented in an intermediate form which describes the graphics operations necessary to construct the bit mapped image for the page (i.e., the entire page). This intermediate form is referred to as display list. Further, at column 12, lines 45 to 47, the patent states that for banding to be viable, the intermediate representation must meet two requirements -- (i) it must fit in considerably less memory than the full image would require, and (ii) the commands to generate a band must be executable within the time it takes to print the previous band. Therefore, with reference to column 12, lines 50 to 55, Applicant understands the patent as describing that the graphic orders of PBC are designed to be an extremely compact representation of the printed page. Run Length Limited (RLL) compression of graphics data and the elimination of redundant information in the display list enables the intermediate form of the printed page to be significantly smaller than the actual bit mapped image. In Applicant's understanding, RLL compression is a method of encoding data prior to storage. The RLL algorithm looks for runs of repeated characters and replaces them with a single instance of the character and the length of the run.

Accordingly, the Butterfield patent appears to take a graphical page description of an entire image, and from that, generates "graphic orders" which graphically

describe bands of the entire image to be rendered. The memory required to store the intermediate form of the graphical orders will be smaller than the actual pixel data they represent. Applicant does not understand the Butterfield patent to suggest any reason to return the pixel image data to any compressed form. Once rendered, the pixel data likely cannot be returned to a graphical compressed form.

Accordingly, the Butterfield patent appears to teach the compression of the intermediate form (i.e., the graphics orders and the display list representing the entire page to be printed). However, Applicant submits that the patent does not teach or even expressly/impliedly suggest particular claim features of the present invention -- namely, each of the bands being stored as independent compressed pixel image data such that each of the bands is configured for independent manipulation.

Accordingly, Applicant submits that the Bantz, et al. and the Butterfield patents, taken alone or in combination, fail to disclose or suggest at least the features of each of the bands being stored as independent compressed pixel image data such that each of the bands is configured for independent manipulation, as recited in independent Claims 84 and 86.

In addition, Applicant also submits that the Bantz, et al. and Butterfield patents, taken alone or in any combination, fail to disclose or suggest at least the features of rendering a band of pixel image data forming a corresponding band of an image, where the band is formed independently of data included in the band and represents an independently displayable portion of the image, and compressing the band of pixel image data to form a corresponding independent compressed band, as recited in independent Claim 91.

Also, in making the rejection under 35 U.S.C. § 103(a), the Examiner states that "Lotspiech teaches that storing the image in compressed form to reduce the required

memory is well known in the art (see Butterfield column 12, lines 50-55).” Applicant believes that the mention of “Lotspiech” was a typographical error and that the Examiner meant to recite “Butterfield” since the Examiner refers to the Butterfield patent throughout the remainder of the Office Action.

Nevertheless, Applicant submits that the Lotspiech patent does not remedy the deficiencies of the Bantz, et al. and Butterfield patents. In fact, Applicant submits that the Lotspiech patent teaches away from the present invention for at least the following reasons. Firstly, the Lotspiech patent discloses a method in which an entire image is stored in compressed form in a file from which it is taken for decompression (col. 2, line 59). Secondly, the Lotspiech patent teaches that as soon as a nominal amount of the image is present in the file such amount is transferred to a circuit where it is decompressed, where only certain bit positions within certain of the scan lines of the image are transferred for decompression (col. 5, lines 10 to 15). Thirdly, the Lotspiech patent teaches that sections transferred out of the memory and rotated are compressed and stored back in the file where the adjacent boundaries thereof are electronically knitted together (col. 3, lines 26 to 32). Thus, one with ordinary skill in the art would not read the Lotspiech patent to teach or suggest that bands of an image are stored as independently compressed image data.

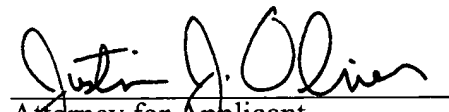
For the foregoing reasons, Applicant submits that the independent claims are distinguishable over the applied references, and requests withdrawal of the rejection under 35 U.S.C. § 103.

The remaining claims in the present application still under consideration are dependent claims which depend from the independent claims discussed above, and thus are patentable over the documents of record for reasons noted above with respect to those claims. In addition, each recites features of the invention still further distinguishing it from

the applied documents. Applicant requests favorable and independent consideration thereof.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,



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UNITED STATES PATENT AND TRADEMARK OFFICE

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Office of Patent Legal Administration << Pre-OG Notices << << Amendments in a Revised Format Now Permitted

The United States Patent and Trademark Office (USPTO or Office) is permitting applicants to submit amendments in a revised format as set forth herein. The revised amendment format is essentially the same as the amendment format that the Office is considering adopting via a revision to 37 CFR 1.121 (Manner of Making Amendments). The revision to 37 CFR 1.121 (if adopted) will simplify amendment submission and improve file management. The Office plans to adopt such a revision to 37 CFR 1.121 by July of 2003, at which point compliance with revised 37 CFR 1.121 will be mandatory.

The revised amendment format is an expansion of the special amendment process instituted for a prototype Electronic File Wrapper program described in USPTO ANNOUNCES PROTOTYPE OF IMAGE PROCESSING, 1265 Off. Gaz. Pat. Office 87 (Dec. 17, 2002) ("Prototype Announcement"). The special amendment process (which was limited to claims) has proven overwhelmingly acceptable to applicants participating in the prototype and beneficial to examiners. The revised amendment format provides for amendments to be made to the specification and the drawings in addition to the claims.

Effective immediately, **all** applicants, including applicants participating in the prototype, may submit amendments using the revised amendment format set forth herein. Applicants may wish to submit all amendments in the revised amendment format because: (1) it will facilitate transition to a revised amendment format when it becomes mandatory, (2) inconsistent versions of claim amendments (clean and marked-up) will be avoided, and (3) time and resources will be saved.

WAIVER of 37 CFR 1.121

The provisions of 37 CFR 1.121(a), (b), (c) and (d) are waived for amendments to the **claims, specification, and drawings** in all applications in all Technology Centers where the amendments comply with the revised amendment format detailed below. Note: The revised amendment format (and the waiver) does **not** apply to 37 CFR 1.121(h) and (i) which indicate that amendments to reissue applications and reexamination proceedings are governed by 37 CFR 1.173 for reissue applications and 37 CFR 1.530 (d)-(k) for *ex parte* and *inter partes* reexaminations.

In addition, the WAIVER indicated in the above mentioned Prototype Announcement for the limited (claims only) amendment process of that prototype is also expressly continued and amendments in applications (other than reissue applications) in all Technology Centers that comply with the requirements in that announcement will be acceptable.

REVISED AMENDMENT FORMAT**I. Begin Sections on Separate Sheets:**

Each section of an amendment paper (e.g., Amendments to the Specification, Amendments to the Claims, Remarks) shall begin on a separate sheet to facilitate separate indexing and electronic scanning of the document.

For example, each of the following four sections of an amendment paper must start on a separate sheet:

- a.) Introductory Comments

- b.) Amendments to the Specification
- c.) Amendments to the Claims
- d.) Remarks

II. Submit Only One Version (with markings) of an Amended Part:

The requirement to provide two versions of a replacement paragraph, section, or claim (a clean version and a marked up version), as set forth in current 37 CFR 1.121, is waived where the format set forth below is followed.

III. Amendments to the Claims

A. A Complete Listing of Claims is Always Required:

If an amendment adds, changes or deletes any claim, a detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remains under examination in the application, must be presented, and the amendment to the claims is expressed in the listing. The listing shall be presented as follows:

1. Ascending Order and Status Identifier Required

The listing shall be provided in sequential ascending numerical order (beginning with claim 1). A status identifier shall be provided for every claim in a parenthetical expression following the claim number (e.g., "Claim 1. (original)"). A list of acceptable status identifiers is set forth in part B, below. The text of **all** claims under examination shall be submitted each time any claim is amended. Cancelled and withdrawn claims should be indicated by only the claim number and status. The text of cancelled or withdrawn claims should not be presented.

2. Markings in Currently Amended Claims Required

All claims *being currently amended* shall be submitted with markings to indicate the changes that have been made relative to the immediate prior version of the claims. The changes in any amended claim should be shown by strikethrough (for deleted matter) or underlining (for added matter). No separate "clean" version should be submitted for currently amended claims, as this requirement has been eliminated. **Markings should only be made in claims being currently amended in an amendment paper.**

3. Only Clean Text Required for Other Claims Under Examination.

The text of pending claims *not being currently amended* that are under examination shall be presented in a clean version in the listing. Any claim presented in clean version constitutes an assertion that it has not been changed relative to the immediate prior version.

4. Status to Effect Claim Cancellation or Addition.

A claim may be cancelled by merely indicating the status of the claim as cancelled. Any new claim added by amendment must be indicated by the appropriate status identifier and shall not be underlined. Thus, added new claims of status (new), (reinstated - formerly claim #_) and (re-presented - formerly dependent claim #_) must be presented in clean version. Additional claims may be subject to additional fees, as appropriate.

5. When Grouping of Claims is Permitted.

Consecutive cancelled or withdrawn claims may be aggregated into one line of the listing (e.g. Claims 1 - 5 (cancelled)).

6. Use "Currently Amended" Status Where Applicable.

If any "previously reinstated" or "previously re-presented" claim is being amended, the status shall be indicated as "currently amended" with markings as indicated in paragraph A2, above. Multiple status identifiers should not be used for any single claim.

B. Status Identifiers that May be Used:

In order to promote uniformity and consistency, only the following eleven (11) defined status identifiers should be used to indicate the status of the claims (in parentheses after the claim number):

- | | |
|--|---|
| 1. (Original): | Claim filed with the application following the specification (i.e., not added by preliminary amendment). |
| 2. (Currently amended): | Claim being amended in the current amendment paper. |
| 3. (Previously amended): | Claim not being currently amended, but which was amended in a previous amendment paper. |
| 4. (Cancelled): | Claim cancelled or deleted from the application. |
| 5. (Withdrawn): | Claim still in the application, but in a non-elected status. |
| 6. (Previously added): | Claim added in an earlier amendment paper. |
| 7. (New): | Claim being added in the current amendment paper. |
| 8. (Reinstated - formerly claim # _): | Claim deleted in an earlier amendment paper, but re-presented with a new claim number in current amendment. |
| 9. (Previously reinstated): | Claim deleted in an earlier amendment and reinstated in an earlier amendment paper. |
| 10. (Re-presented - formerly dependent claim # _): | Dependent claim re-presented in independent form in current amendment paper. |
| 11. (Previously re-presented): | Dependent claim re-presented in independent form in an earlier amendment, but not currently amended. |

C. Example of Listing of Claims:

Claims 1-5 (cancelled)
 Claim 6 (withdrawn)
 Claim 7 (previously amended): A bucket with a handle.
 Claim 8 (currently amended): A bucket with a ~~green~~ blue handle.
 Claim 9 (withdrawn)
 Claim 10 (original): A bucket with a wooden handle.
 Claim 11 (cancelled)

Claim 12 (new): A bucket with plastic sides and bottom.

Claim 13 (previously added): A bucket having a circumferential upper lip.

Claim 14 (re-presented - formerly claim 11): A black bucket with a wooden handle.

IV. Amendments to the Specification

Amendments to the specification are to be made by presenting replacement paragraphs, sections or a substitute specification marked up to show changes made relative to the immediate prior version, as set out in 37 CFR 1.121(b). The changes should be shown by strikethrough (for deleted matter) or underlining (for added matter). No accompanying "clean" version shall be supplied. The amendments to the specification shall be presented only one time, and will not appear in successive amendment documents.

V. Amendments to the Drawings

Amendments to the drawing figures shall be made by presenting replacement figures which include the desired changes, without markings, and which comply with § 1.84. The changes shall be explained in the accompanying remarks section of the amendment paper. If the amended drawings are not approved, the applicant will be notified in the next Office action. Any amended drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even though only one figure may be amended. The figure number in the amended drawing should not be labeled as "amended."

For further information on the prototype image electronic processing of patent applications, please contact the Search and Information Resources Administration at: image.processing@uspto.gov. Any questions regarding the submission of amendments pursuant to the revised practice set forth in this notice should be directed to Elizabeth Dougherty (Elizabeth.Dougherty@uspto.gov), Gena Jones (Eugenia.Jones@uspto.gov) or Joe Narcavage (<mailto:Joseph.Narcavage@uspto.gov>). For information on the waiver or legal aspects of the program, please contact Jay Lucas (Jay.Lucas@uspto.gov) or Rob Clarke (Robert.Clarke@uspto.gov).

Date: 1/31/03

Signed: /s/

STEVEN KUNIN

Deputy Commissioner for Patent
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